

Appendix A. Claim Amendments.

1. (currently amended) A method for selectively binding a neutral, positively-charged, or negatively-charged molecule, in solution or in the solid state, said method comprising contacting the molecule with a compound comprising a porphyrin macrocycle, and further comprising one or more carboranyl groups that are linked to the porphyrin macrocycle by carbon-carbon bonding; wherein said selective binding comprises one or more steps selected from the group consisting of:

(a) coordination to a pentacoordinated or hexacoordinated metal ion in the core of the porphyrin macrocycle;

(b) electrostatic interaction with one or more carboranyl groups; and

(c) π - π interaction with the porphyrin macrocycle.

2. (original) A method as recited in Claim 1, wherein the compound comprises a pentacoordinated or hexacoordinated metal ion at the core of the porphyrin macrocycle.

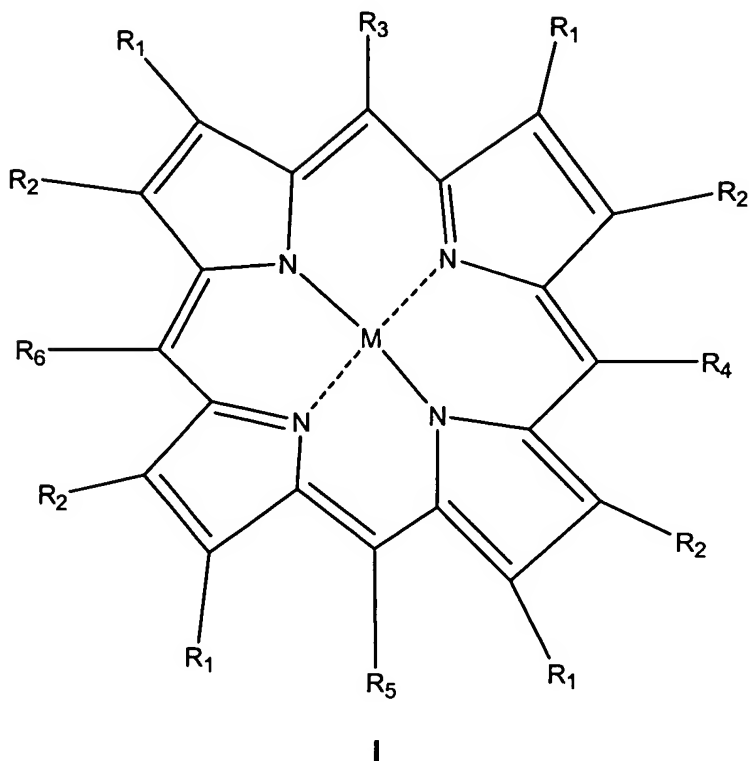
3. (original) A method as recited in Claim 1, wherein the compound comprises a zinc(II), iron(III), manganese(III), aluminum(III), or tin(IV) ion at the core of the porphyrin macrocycle.

4. (original) A method as recited in Claim 1, wherein the compound comprises one or more negatively-charged *nido*-carborane groups bound to the periphery of the porphyrin macrocycle.

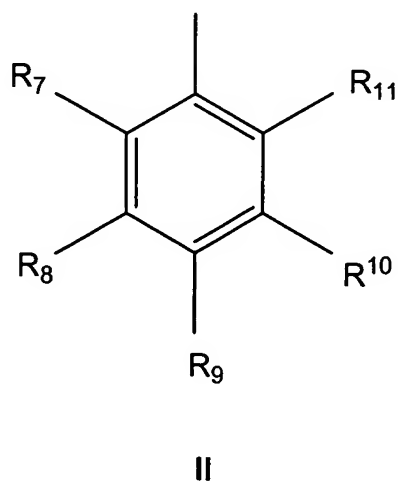
5. (original) A method as recited in Claim 1, wherein the compound comprises one or more *closo*-carborane groups bound to the periphery of the porphyrin macrocycle.

6. (original) A method as recited in Claim 1, wherein the core of the porphyrin macrocycle is positively charged or protonated.

7. (original) A method as recited in Claim 1, wherein the compound has structure I:



wherein M is 2H or a pentacoordinated or hexacoordinated metal ion; R₁ and R₂ are each independently hydrogen, C₁ to C₄ alkyl or hydroxyalkyl; and R₃, R₄, R₅, and R₆ are each independently hydrogen, phenyl, or substituted phenyl having structure II:



wherein R₇, R₈, R₉, R₁₀, and R₁₁ are independently hydrogen or a carboranyl group, wherein such a carboranyl group is linked to the phenyl group by a carbon-carbon bond;

and wherein one or two of R7, R8, R9, R10, and R11 are hydrogen or such a carboranyl group; and

wherein at least one of R3, R4, R5, and R6 is a substituted phenyl having structure II and having at least one such a carboranyl group.

8. (original) A method as recited in Claim 7, wherein at least two of R3, R4, R5, and R6 are substituted phenyls having structure II and each having at least one such carboranyl group.

9. (original) A method as recited in Claim 7, wherein each of R3, R4, R5, and R6 is a substituted phenyl having structure II and each having at least one such carboranyl group.

10. (original) A method as recited in Claim 7, wherein at least two of R3, R4, R5, and R6 are substituted phenyls having structure II and each having at least one such *nido*-carboranyl group.

11. (original) A method as recited in Claim 7, wherein each of R3, R4, R5, and R6 is a substituted phenyl having structure II and each having at least one such *closo*-carboranyl group.

12. (original) A method as recited in Claim 7, wherein at least two of R3, R4, R5, and R6 are substituted phenyls having structure II and each having at least one such carboranyl group at R7 or R11.

13. (original) A method as recited in Claim 7, wherein each of R3, R4, R5, and R6 is a substituted phenyl having structure II and each having at least one such carboranyl group at R7 or R11.

14. (original) A method as recited in Claim 7, wherein at least two of R3, R4, R5, and R6 are substituted phenyls having structure II and each having at least one such carboranyl group at R8 or R10.

15. (original) A method as recited in Claim 7, wherein each of R3, R4, R5, and R6 is a substituted phenyl having structure II and each having at least one such carboranyl group at R8 or R10.

16. (original) A method as recited in Claim 7, wherein at least two of R3, R4, R5, and R6 are substituted phenyls having structure II and each having at least one such carboranyl group at R9.

17. (original) A method as recited in Claim 7, wherein each of R3, R4, R5, and R6 is a substituted phenyl having structure II and each having at least one such carboranyl group at R9.

18. (currently amended) A method as recited in Claim 1, wherein the compound is selected from the group consisting of compounds 3, 4, 5, 6, 9, 10, 11, 12, 15, 16, 17, 18, 21, 22, 23, 24, 28, 29, 30, 31, 33, 34, 35, and 36, as depicted in Figures 1, 2, 3, 4, 5, and 6.